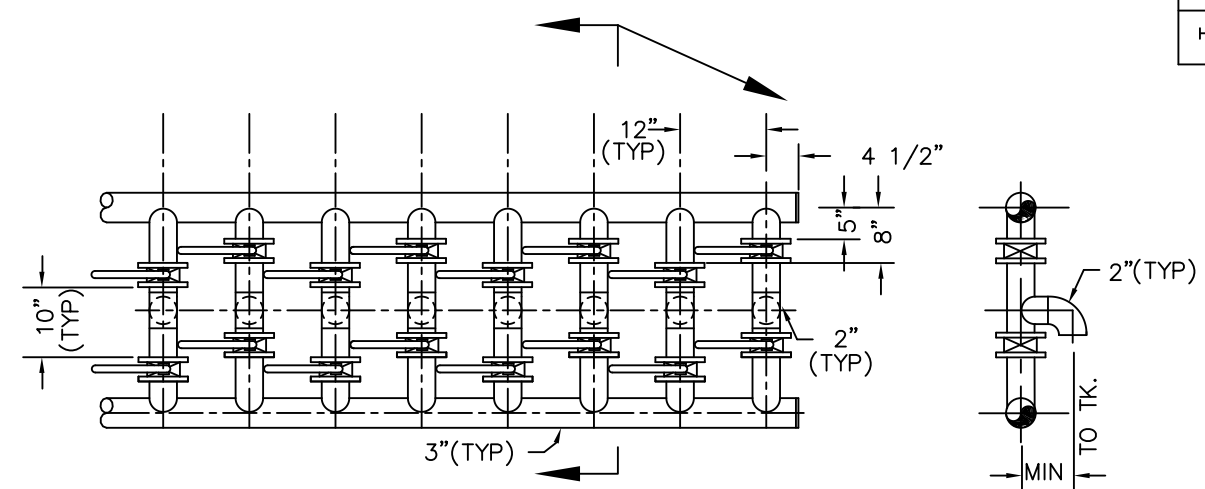
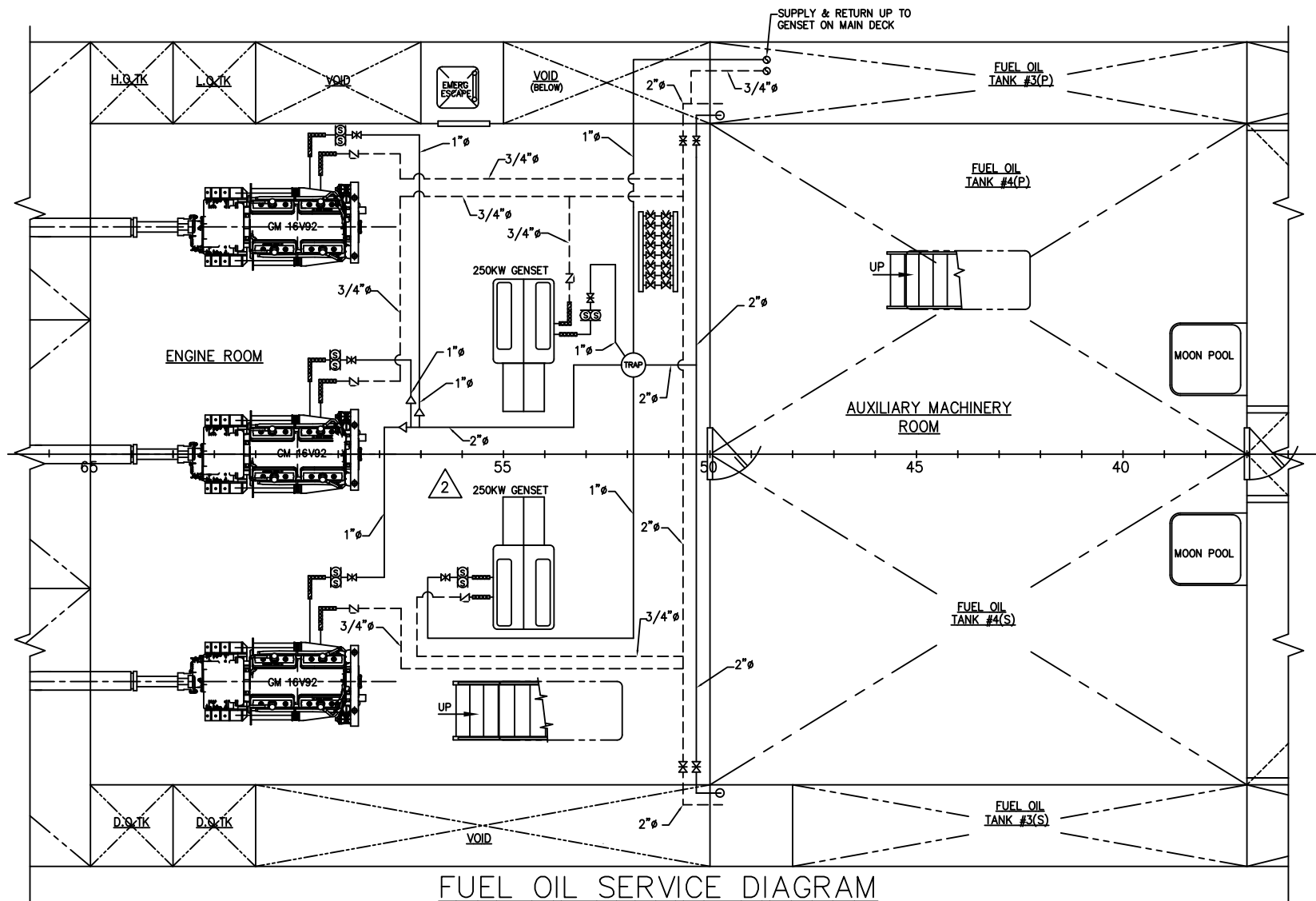


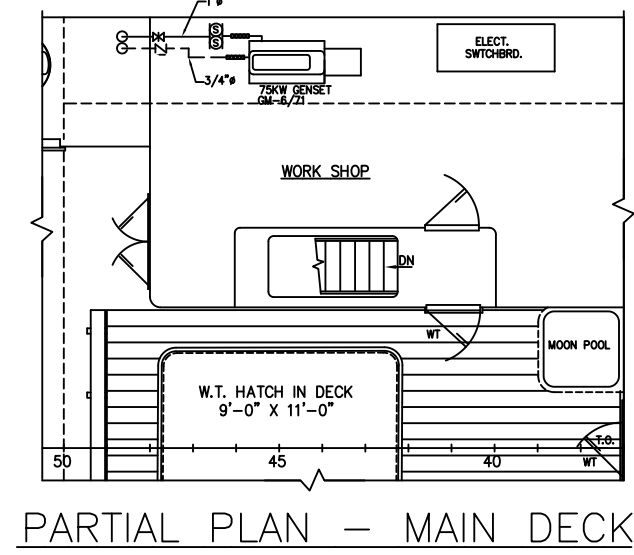
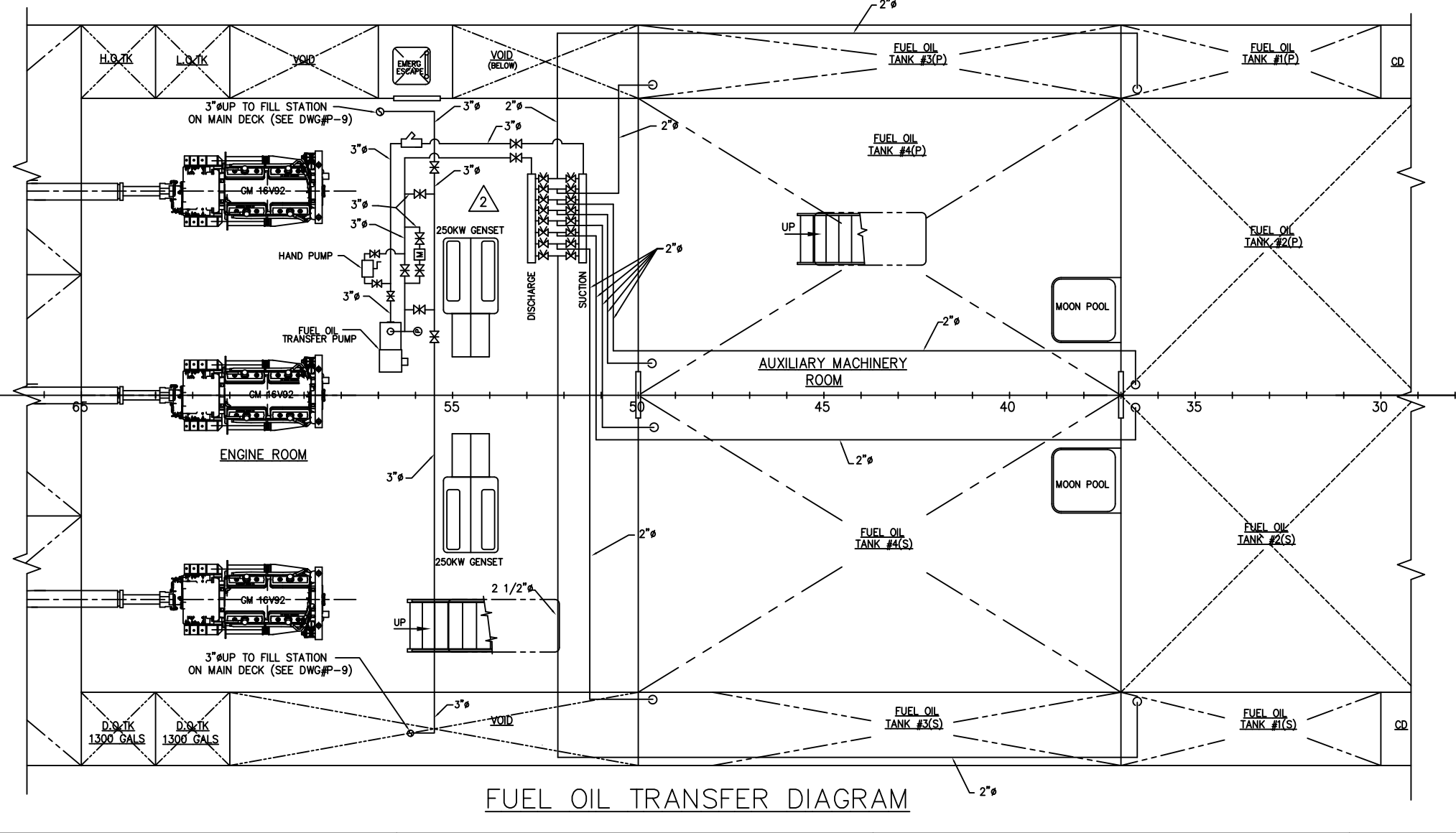
PUMP TABLE						
SERVICE	QTY	TYPE	CAPACITY	DISCH PRESS PSIG	HP	REMARKS
FUEL OIL TRANSFER	1	CFG	160GPM @ 156FT HD		15	BARNES, 25CCE, 3 x 3, SHUT OFF @ 185 FT HD
FUEL/OIL TRANSFER	1					HAND PUMP

MATERIAL SCHEDULE							
NO.	SYSTEMS SERVICE	SIZES	PIPE	VALVES		FITTINGS	TAKE-DOWN JOINTS
				BODIES	TRIM		
1	FUEL OIL TRANSFER AND SERVICE	3/4" TO 3"	BLK STL ASTM A-53 GRADE A OR B SCH 40	GATE, BRZ 150# THD ASTM B-62	BRONZE	BW, STD WT ASTM A-234 ANSI B16.9	FLG, 150# ASTM A-105 ANSI B16.5
				CHECK, BRZ 150# THD ASTM B-62	BRONZE		
				BUTTERFLY D.L. LUG ASTM A-395	BRONZE		

EQUIPMENT LIST					
EQUIPMENT	QTY	DESCRIPTION	MATERIAL	MFR	REMARKS
STRAINER	1	3" WYE TYPE, 150# FLG	BRONZE W/ SS SCREEN	HAYWARD	
WATER SEP/FILTER	3			RACOR	MODEL 79/1000 MAX FOR 16V92'S
WATER SEP/FILTER	2			RACOR	MODEL 75/1000 MAX FOR 12V71'S
WATER SEP/FILTER	1			RACOR	MODEL 75/900 MAX FOR 6/71
FLOW METER	1			LIQUID CONTROL	M-60
HOSE		WP 250PSI BURST 1000PSI	WEATHERHEAD	H166	



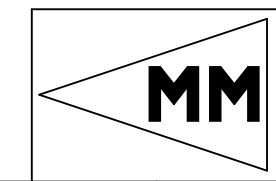
SYMBOL LIST	
SYMBOL	DESCRIPTION
	VALVE, GATE
	VALVE, CHECK
	VALVE, BUTTERFLY
	WATER SEPARATOR/FILTER, DUPLEX
	FLOW METER
	HOSE
	PIPE UP
	PIPE DOWN
	WATER TRAP



GENERAL NOTES

1. FILTER/LUBRICATOR TO BE FURNISHED WITH ALL ENGINES THAT ARE AIR STARTED.
2. TERMINATE FUEL SUCTION LINE FOR ENGINE SUPPLY APPROX. 9" ABOVE LOW SPOT OF TANK.
3. WHERE POSSIBLE FUEL/LUBE OIL TANKS TO BE EQUIPPED WITH 1 1/2" DRAIN AT LOW SPOT OF TANK.
4. HOSES AT ALL ENGINE SUPPLY AND RETURNS TO BE USCG APPROVED AND EQUIPPED WITH FIRE SLEEVES.

2	ADDED SHIPYARD COMMENTS.	RLP 4/23/99
1	ISSUED FOR CONSTRUCTION.	RLP 4/10/99
NO.	ALTERATIONS	BY/DATE
TITLE: 160'-0" x 40'-0" x 13'-0" RESEARCH VESSEL FUEL OIL TRANSFER AND SERVICE SYSTEM DIAGRAM		
PREPARED FOR: CAMERON OFFSHORE BOATS, INC. CAMERON, LOUISIANA		
MARINE MANAGEMENT INC. MARINE DESIGNERS and SURVEYORS		SHF: 1 OF: 1 ALT NO: 2
P.O. Box: 1803 Ocean Springs, MS 39566-1803 Ph: 601-872-2846 Fax: 601-872-3666 Online: rpayne@mmiatac.com		



DRAWN BY:	ROBERT PAYNE	DATE:	4/8/99
CHECKED BY:		DATE:	
APPROVED BY:		DATE:	
APPROVED BY:		DATE:	
SCALE:	NONE	CONTRACT NO.:	S-185-32
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